6th International Workshop "Gam-R – Gamification Reloaded"

In Conjunction with the Mensch und Computer 2023 Conference in Rapperswil, Switzerland

Athanasios Mazarakis
Web Science
ZBW – Leibniz Information Centre for Economics
Kiel, Germany
ama@informatik.uni-kiel.de

Thomas Voit
Computer Science
Nuremberg Institute of Technology
Nuremberg, Germany
thomas.voit@th-nuernberg.de

KEYWORDS

Gamification, Game-based Learning, Game-Based Learning, Serious Games, Pervasive Games

1 TOPIC AND CONTENT OF THE WORKSHOP

The "Gam-R – Gamification Reloaded" series is a regular international workshop on gamification and related topics. Gamification as a scientific concept for using game-like elements in a non-game context [3] is here to stay [7–11]. The outcomes of previous workshops were summarized and published to identify current and future gamification trends and to serve as the foundation for the new focus of the workshop [6]. We strongly suggest and expect authors for this workshop to use the results of this publication [6] to align their submissions within the gamification field and the workshop's intention. In addition, we invite for submission of closely related manuscripts for topics about serious games, game-based learning, or games with a purpose, to name a few.

From a scientific standpoint, gamification can boost motivation for education, interact with health-related issues, encourage sustainable consumption, and improve consumer loyalty, among other things [2, 6]. Furthermore, additional domains of application have recently been introduced, which, among other things, are now coming into focus and will be explored at this workshop as well, e.g., artificial intelligence (AI) and machine learning (ML) [5, 14] augmented reality (AR) [4], virtual reality (VR) [13], mixed reality (MR) [12], or Internet of Things (IoT) [1].

Researchers and practitioners are invited to present and discuss new research ideas during the workshop. Additionally, applications or studies on gamification that fulfill high scientific standards are valued. Experts can then discuss the accepted papers during the workshop. This allows the community to provide feedback to the authors for future projects.

We accept submissions on the following topics, although this is not an exhaustive list:

- Artificial Intelligence (AI) and Machine Learning (ML)
- Open Science and Citizen Science
- Augmented (AR), Virtual (VR), and Mixed Reality (MR)
- Internet of Things (IoT)
- Analog and Hybrid Gamification
- Gamification for Individuals with Disabilities
- Ethical Aspects of Gamification
- Sustainability

This list represents emerging gamification application fields. Of course, other topics such as adaptive and personalized gamification, gamification definitions and theories, serious games and game-based learning, and many other topics are welcome. As a result, we also seek contributions about previously identified research gaps, such as the ones listed below:

- Focusing on the research area, particularly definitions and theories for gamification and beyond.
- Analyzing game design elements, particularly the individual-, joint- and user-related effects.
- How to replace PBL (points, badges, and leaderboards) with other game design elements.
- Identifying long-term effects in empirical studies and how to conduct experiments.

Accepted papers will be published in the open-access GI Digital Library and are indexed by Google Scholar and others. The website for the workshop can be found at https://www.gamification-reloaded.com/ or https://www.gam-r.de/.

2 OBJECTIVES, PLANNED ACTIVITIES, AND TARGET AUDIENCE OF THE WORKSHOP

This scientific workshop intends to accomplish the following two objectives for researchers and practitioners interested in gamification:

- Presentation and debate of fresh concepts, solutions, and research studies on gamification.
- To meet and network with gamification researchers for future collaboration.

The workshop consists of two parts. The first part includes the presentation and in-depth discussion of selected papers, which will also be included in the workshop proceedings of the Mensch und Computer 2023 conference. The organizing team will select the papers according to a preceding peer review, whereby at least three reviewers will evaluate each submission. In previous years, between two and four submissions were selected for presentation, which is also the intention for 2023. This first part will last between one and a half and three hours and thus last the morning.

Like in previous years, in the second part of the workshop, a hands-on workshop on player types will occur. This will involve explicitly reviewing the perception and use of player types with the participants using an illustrative example. The active exchange

Veröffentlicht durch die Gesellschaft für Informatik e.V.
in P. Fröhlich & V. Cobus (Hrsg.):
Mensch und Computer 2023 – Workshopband, 03.-06. September 2023, Rapperswil

https://doi.org/10.18420/muc2023-mci-ws08-111

between the community has proven to be a success factor of the workshop and will therefore be maintained. Although we have an open-end session, we expect this second part to last two or three hours.

Four submissions have been accepted for presentation at the workshop. The accepted submissions are briefly presented here:

- *Muhammad Ali* (University of the Punjab, Pakistan) and *Saleha Azeem* (King Edward Medical University, Pakistan) have authored a submission called *"Gamified Learning Application for Students with ADHD in Pakistan: A Learning-Based Experiment"*. The authors researched the use of gamification to improve learning outcomes for students with ADHD in Pakistan. In particular, the findings show that students who used the gamified learning app showed significant improvements in concentration, motivation, and learning outcomes compared to a control group.
- *Filip Wójcik* (University of Warsaw, Poland) has submitted a paper titled *"Gamified Agency – Addressing Need for Autonomy for Marketing Students"*. He presents a study applying narration and badges with the possibility of choice. Even though the results are mixed, it is a good foundation for further studies regarding gamification usage in university classes, especially as a tool addressing the need for autonomy.
- *Valentin Grimm* and *Jessica Rubart* (both from OWL University of Applied Sciences and Arts, Germany) provide an interesting article about *"Unlocking E-learning and XAI Concepts with Free Limited Choice"*. The submission focuses on a game design element that aims to increase the motivation of users to focus on a single aspect while having a strong feeling of free choice, which they call free limited choice. Based on this, they conclude that free limited choice can be a useful concept for specific purposes but also highlight different aspects to consider when utilizing it.
- *Sebastian Weber*, *Gerhard Klassen*, *Marc Wyszynski* and *Bastian Kordyaka* (all from the University of Bremen, Germany) submitted an article about *"Illuminating the Predictive Power of Gamification to Inspire Technology Users"*. They explore the relationship between gamification design features and the motivational state of inspiration in the context of eLearning. Their findings reveal that achievement-related gamification features, such as badges, points, levels, and tasks, evoke inspiration and foster the inspiration to learn. This research contributes to the understanding of how gamification can be leveraged to enhance inspiration and possibly learning outcomes in eLearning environments.

3 ORGANIZING TEAM

Two researchers mainly organize the workshop:

Athanasios Mazarakis is a former computer science postdoc at Kiel University, Germany, now working as a project manager and senior researcher at ZBW – Leibniz Information Centre for Economics on gamification and incentives in the interdisciplinary field between computer science, economics, and psychology for more than a decade. He is currently working on the project "Connect & Collect: AI-powered cloud for interdisciplinary networked research and innovation for future work (CoCo)," a project founded by the Federal Ministry of Education and Research in Germany. Numerous publications on gamification and successful workshop organizations (also at the Mensch und Computer conference series) complete his competence profile.

Thomas Voit has been teaching and researching as a professor on gamification as a business informatics specialist at the Nuremberg University of Applied Sciences since 2014. Before joining the university, he was employed in the automotive industry, where he initiated and led a gamification project to motivate managers to adopt new leadership roles. Since the end of 2016, he has led the gamification research project EMPAMOS in cooperation with the German Games Archive Nuremberg.

REFERENCES

[1] Abdelhadi Alla and Khalid Nafil. 2019. Gamification in IoT Application: A Systematic Mapping Study. *Procedia Computer Science* 151 (2019), 455–462. https://doi.org/10.1016/j.procs.2019.04.062

[2] Daniel Cermak-Sassenrath. 2019. Current Challenges in Gamification Identified in Empirical Studies. In *Proceedings of the 18th European Conference on e-Learning (ECEL)*, Rikke Ørngreen, Mie Buhl, and Bente Meyer (Eds.). Academic Conferences and Publishing International Limited, Reading, UK, 119–127.

[3] Sebastian Deterding, Dan Dixon, Rilla Khaled, and Lennart Nacke. 2011. From Game Design Elements to Gamefulness: Defining Gamification. In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments - MindTrek ´11*. ACM, New York, New York, USA, 9–15.

[4] Ramy Hammady, Minhua Ma, and Nicholas Temple. 2016. Augmented Reality and Gamification in Heritage Museums. In *Serious Games (Lecture Notes in Computer Science)*, Tim Marsh, Minhua Ma, Manuel Fradinho Oliveira, Jannicke Baalsrud Hauge, and Stefan Göbel (Eds.). Springer International Publishing, Cham, 181–187. https://doi.org/10.1007/978-3-319-45841-0_17

[5] Alireza Khakpour and Ricardo Colomo-Palacios. 2021. Convergence of Gamification and Machine Learning: A Systematic Literature Review. *Technology, Knowledge and Learning* 26, 3 (2021), 597–636. https://doi.org/10.1007/s10758-020-09456-4

[6] Athanasios Mazarakis. 2021. Gamification Reloaded: Current and Future Trends in Gamification Science. *i-com* 20, 3 (Nov. 2021), 279–294. https://doi.org/10.1515/icom-2021-0025 Publisher: Oldenbourg Wissenschaftsverlag.

[7] Athanasios Mazarakis, Sophie Jent, Alexander Bartel, and Monique Janneck. 2018. Gam-R – Gamification Reloaded. In *Mensch und Computer 2018 - Workshopband*. Gesellschaft für Informatik e.V., Bonn, Germany, 1–2. https://doi.org/10.18420/muc2018-ws03-0132

[8] Athanasios Mazarakis, Sophie Jent, Alexander Bartel, and Monique Janneck. 2019. Gam-R – Gamification Reloaded. In *Mensch und Computer 2019 - Workshopband*. Gesellschaft für Informatik e.V., Bonn, Germany, 1–2. https://doi.org/10.18420/muc2019-ws-242

[9] Athanasios Mazarakis, Sophie Jent, Alexander Bartel, and Monique Janneck. 2020. Gam-R – Gamification Reloaded. In *Mensch und Computer 2020 - Workshopband*. Gesellschaft für Informatik e.V., Bonn, Germany, 1–2. https://doi.org/10.18420/muc2020-ws103

[10] Athanasios Mazarakis, Sophie Jent, and Thomas Voit. 2021. Gam-R – Gamification Reloaded. In *Mensch und Computer 2021 - Workshopband*. Gesellschaft für Informatik e.V., Bonn, Germany, 1–3. https://doi.org/10.18420/muc2021-mci-ws11-120

[11] Athanasios Mazarakis and Thomas Voit. 2022. 5th International Workshop "Gam-R – Gamification Reloaded". In *Mensch und Computer 2022 - Workshopband*. Gesellschaft für Informatik e.V., Bonn, Germany, 1–3. https://doi.org/10.18420/muc2022-mci-ws08-115

[12] Diego Molero, Santiago Schez-Sobrino, David Vallejo, Carlos Glez-Morcillo, and Javier Albusac. 2021. A Novel Approach to Learning Music and Piano Based on Mixed Reality and Gamification. *Multimedia Tools and Applications* 80, 1 (2021), 165–186. https://doi.org/10.1007/s11042-020-09678-9

[13] Matthias Sünсksen, Henner Bendig, Michael Teistler, Markus Wagner, Oliver Johannes Bott, and Klaus Dresing. 2018. Gamification and Virtual Reality for Teaching Mobile X-Ray Imaging. In *Proceedings of the IEEE 6th International Conference on Serious Games and Applications for Health (SeGAH)*. 1–7. https://doi.org/10.1109/SeGAH.2018.8401364 ISSN: 2573-3060.

[14] Thomas Voit, Alexander Schneider, and Mathias Kriegbaum. 2020. Towards an Empirically Based Gamification Pattern Language using Machine Learning Techniques. In *32nd IEEE Intl. Conference on Software Engineering Education & Training (CSEE&T)*. 329–332. https://doi.org/10.1109/CSEET49119.2020.9206223 ISSN: 2377-570X.